Frontend Development with React.js

InsightStream: Navigate the News

# Introduction

## Project Title: InsightStream:Navigation the News Team Members:

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* **Team Member-Karan kumar M**
* **Team Member-Janagiraman R**
* **Team Member-Aravind G**

# Project Overview

## Purpose

## InsightStream is a groundbreaking web-based news application that transforms how users discover, explore, and engage with news. Utilizing advanced technologies and an intuitive interface, it delivers a seamless and highly interactive experience. Unlike conventional news platforms, InsightStream moves beyond static articles by offering dynamic search capabilities, categorized news browsing, and personalized content. Whether for casual readers, journalists, or researchers, the platform ensures fast access to the latest updates from reliable sources through real-time API integrations.

## Features

News from API Sources**: Fetches news articles from external APIs using Rapid API integration.**

Visual News Exploration**: Presents news with images and categorized sections for**

easy navigation.

Advanced Search Feature**: Enables users to find news articles based on keywords and specific topics.**

User-Friendly Design**: Provides an intuitive UI for smooth browsing and interaction.**

Subscription Feature: Users can subscribe to receive daily news updates. Dark Mode: Allows users to switch between light and dark themes for better readability.

Commenting System**: Users can engage in discussions on news articles.**

User Authentication**: Enables personalized news feeds and saved articles.**

# Architecture

## Component Structure

Pages Folder: Stores files for different routes, such as Home, Categories, Search Results, and Article Pages.

Components Folder**: Contains reusable components like Navbar, Hero Section,**

News Cards, Search Bar, and Footer.

Context Folder**: Handles global state management using Context API.**

Styles Folder**: Contains CSS files for styling the application.**

Assets Folder**: Stores images, icons, and static resources.**

## State Management

Global State: Managed using Context API to ensure efficient data sharing across components.

Local State**: Managed using React’ s useState and useEffect hooks to optimize**

rendering.

## Routing

**Uses** React Router Dom **to navigate between different pages seamlessly.**

# Setup Instructions

## Prerequisites

To run the InsightStream application, install the following:

Node.js & npm**: Download here**

Git: Download here

Code Editor (Recommended: Visual Studio Code): Download here

## Installation Steps

1. Clone the repository**:**

**git clone [repository link]**

1. Navigate to the project directory**:**

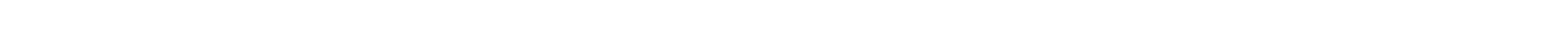
**cd news-app-react**

1. Install dependencies**:**

**npm install**

1. Run the application**:**

**npm start**



**Open a browser and visit https://github.com/sathish-smart/News\_app.git**

# Component Documentation

## Key Components

Navbar: Provides easy navigation across the application.

Hero Section**: Displays trending news and a search bar.**

Category Cards: Highlights different news categories for quick access.

News List**: Fetches and displays relevant news articles dynamically.** Article Page**: Presents full news articles fetched from the API.** Subscription Section**: Allows users to subscribe to daily updates.**

## Reusable Components Reusable Components

1. Button
   * **A standard button component for interactive elements.**
   * **Used across different pages for actions like** "Read More," "Subscribe," and "Search. "
   * **Supports different styles and sizes.**

📁 /components/Button.js

📷  /folder\_name/button.png

1. SearchBar
   * **Provides search functionality to find articles quickly.**
   * **Allows users to enter keywords and fetch relevant news.**
   * **Works in sync with** News List and Category Pages**.**

📁 /components/SearchBar.js

📷  /folder\_name/search\_bar.png

1. NewsCard
   * **Displays individual news articles in a structured format.**
   * **Includes** title, thumbnail image, summary, and a "Read More" button**.**
   * **Enhances user experience with an interactive layout.**

📁 /components/NewsCard.js

📷  /folder\_name/news\_card.png

# Styling

## CSS Frameworks and Libraries

Tailwind CSS**: For modern and responsive styling. Learn more**

React Icons**: Provides a collection of UI icons.**

# Testing Strategy

## Unit Testing

**Uses** Jest **and** React Testing Library **to validate individual components and functionalities.**

## Integration Testing

Tests API calls and UI interactions to ensure smooth user experience.

# Project Execution Plan

## Milestone 1: Project Setup

Install necessary tools and dependencies.

Set up the project structure and routing paths.

## Milestone 2: Development

Develop Navbar and Hero components. Fetch and display trending news.

Implement category-based news navigation. Add the subscription section and footer.

Build the category page to filter news articles.

# API Integration

## Fetching Trending News

**const fetchTopNews = async () => { try {**

**const response = await axios.get('https://newsapi.org/v2/everything?q=popular&apiKey=YOUR\_API\_KEY');**

**return response.data.articles;**

**} catch (error) {**

**console.error('Error fetching news:', error);**

**}**

**};**

## Fetching News by Category

**const fetchCategoryNews = async (category) => { try {**

**const response = await**

**axios.get(`https://newsapi.org/v2/top-headlines?category=${category}&apiKey=YO UR\_API\_KEY`);**

**return response.data.articles;**

**} catch (error) {**

**console.error('Error fetching news:', error);**

**}**

**};**

# Future Enhancements

User Authentication**: Enabling personalized news feeds.**

AI-based News Summarization**: Automatically generating summaries for lengthy articles.**

Enhanced User Interactions**: Implementing features like likes, comments, and**

social sharing.

Offline Mode: Allowing users to save articles for offline reading.

# Known Issues

API Rate Limits**: Some articles may be unavailable due to API restrictions.**

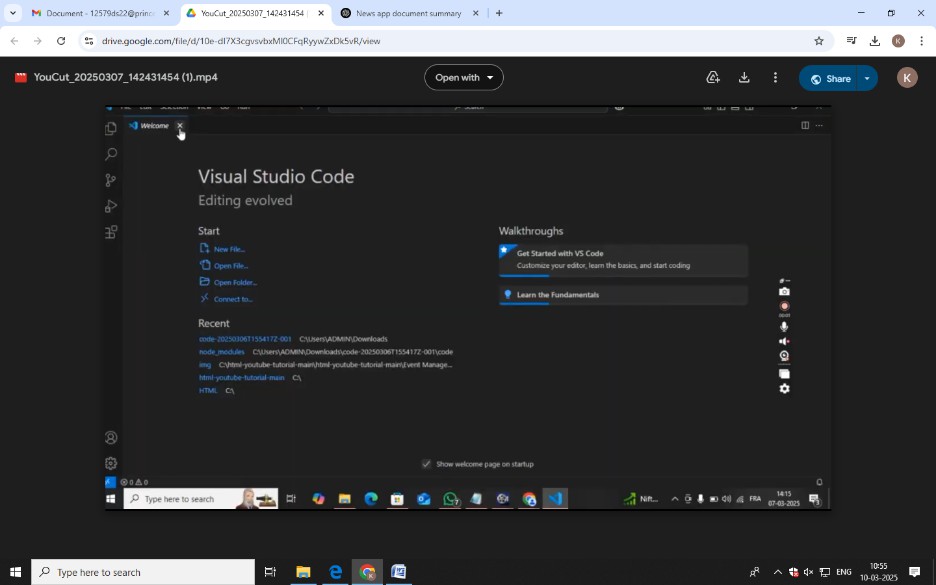
Image Loading Issues**: Certain news sources may not provide images.**

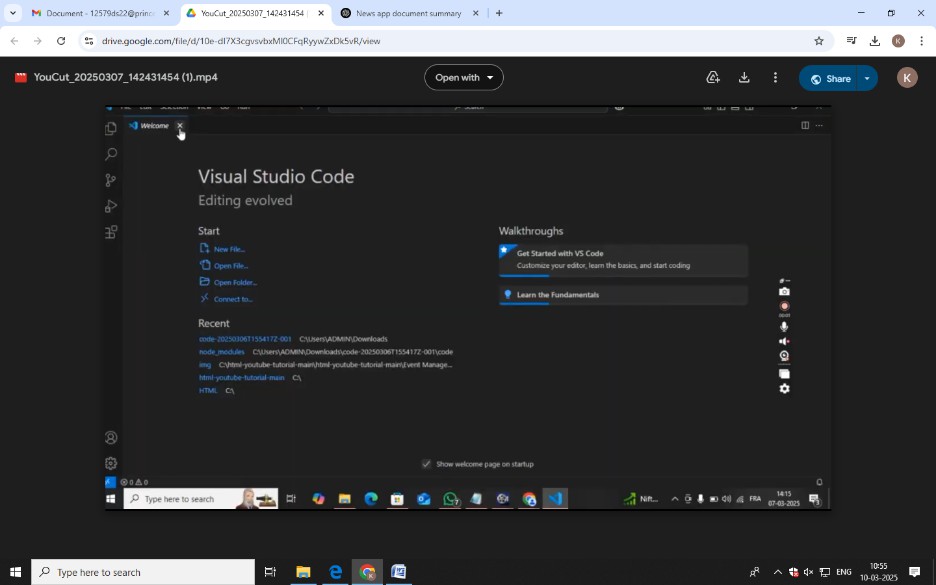
# Project Demo

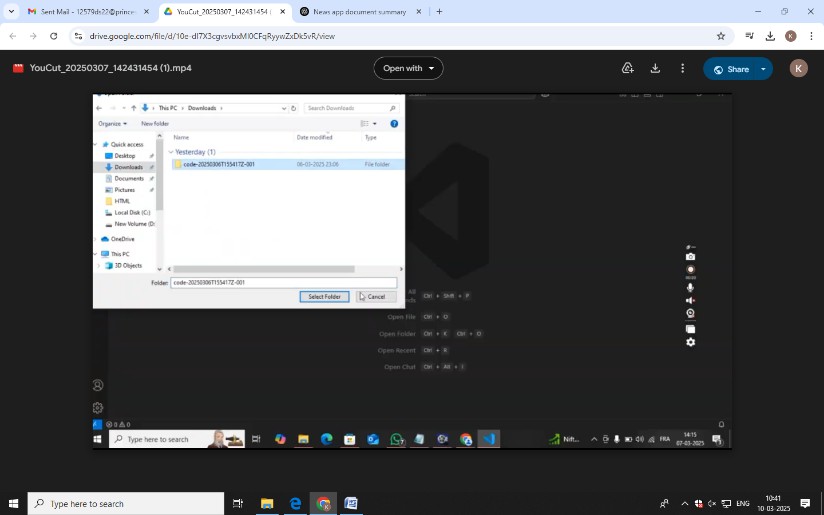
**Watch the project demo here:**

https://drive.google.com/file/d/18QrlrD-e87iQua65NRsdEwshL9q\_hs29/view?usp=shari ng

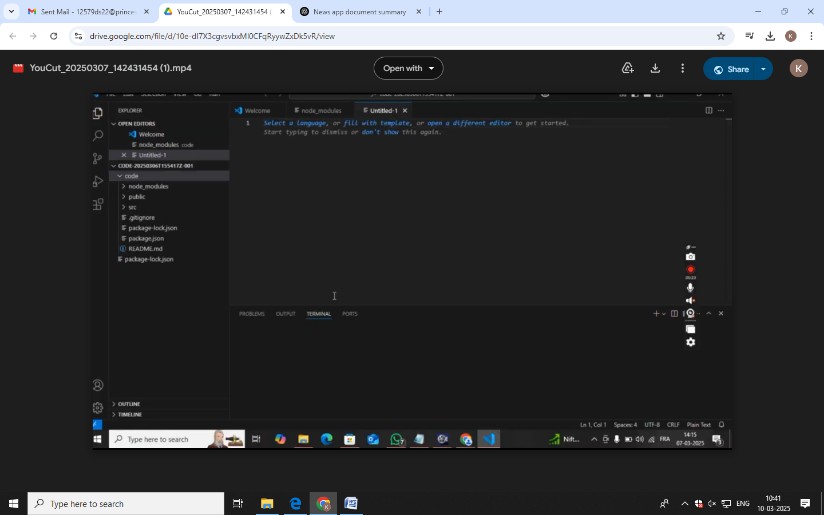
**SCREEN SHOT: STEP 1**



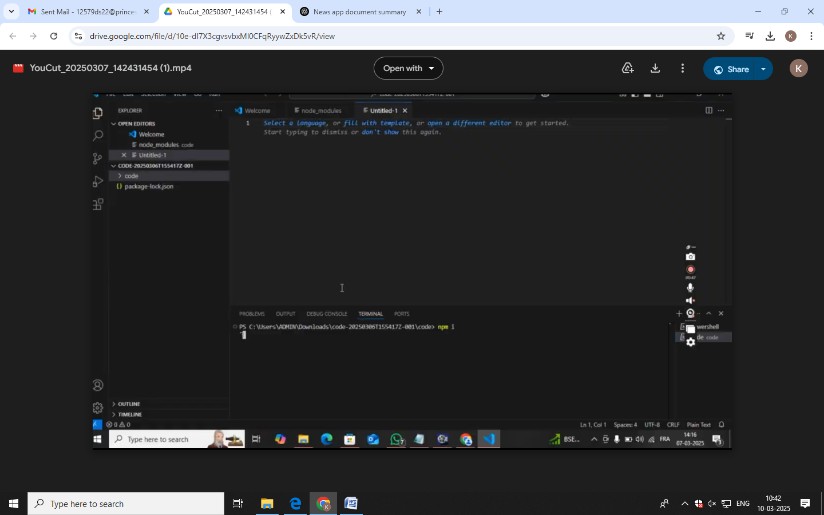


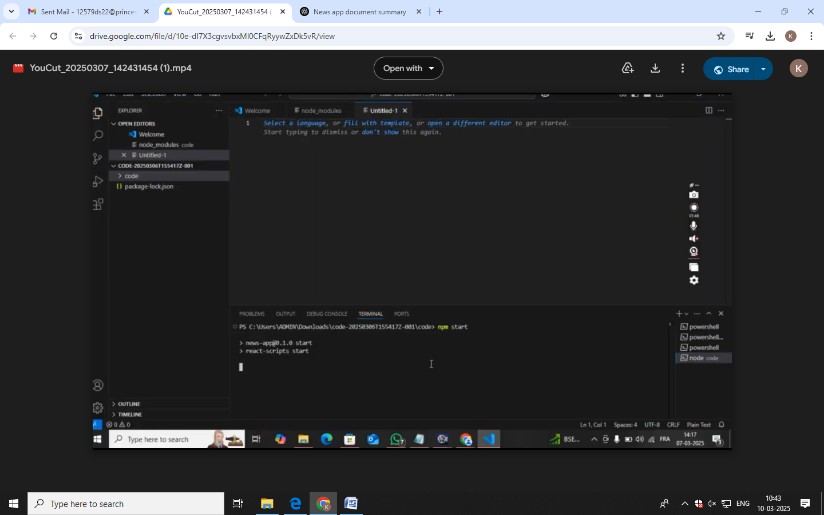


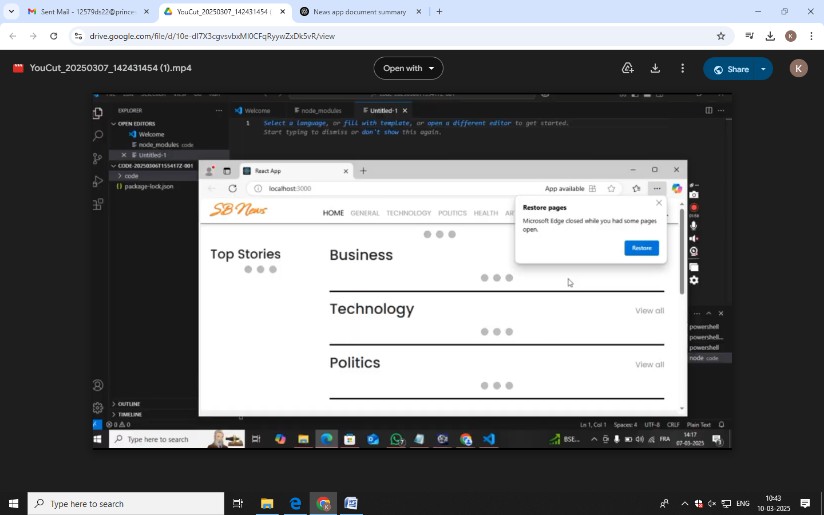
STEP 3:



STEP 3:



STEP 4:

STEP 5:

# Conclusion

InsightStream is a next-generation news platform that provides a seamless, user-friendly, and dynamic news consumption experience. With ongoing enhancements, it aims to be the go-to application for staying informed in real-time.